The Veterinary Record

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 28. JULY 13, 1940. VOL. 52.

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President, Royal College of Veterinary Surgeons

The selection of a Member of Council to fill the highly responsible position of President of the Royal College of Veterinary Surgeons, is not lightly undertaken, and the Council in the first place nominates a Committee of Ex-Presidents to form a nomination committee and their recommendation comes before the Council for ratification or otherwise. This year, the nomination committee's recommendation of Mr. John Holroyd was unanimously accepted.

Mr. Holroyd has wasted no time in his career. He qualified from Liverpool University in 1908—a few months before he was 21—and immediately joined his father in the Blackburn practice. In 1911, he took his Diploma in Veterinary State Medicine at Manchester University under that great man, Sheridan Delépine. What a real veterinarian he was, and what tribute was paid to him when the present Public Health Laboratories, created entirely by Delépine's own efforts, were opened amidst a gathering of medical and veterinary scientists such as are seldom brought together—but who travelled from all parts of Europe to pay tribute to Delépine. In 1914, Mr. Holroyd was awarded the Diploma of Fellowship of the Royal College.

Mr. Holroyd's interests were not long allowed to rest entirely with the practice in Blackburn and district; he was soon singled out as a future leader of men and was elected President of the Lancashire Division of the National Veterinary Medical Association in 1927 and again in 1934.

In the year of his first Presidency of the "Lancashire," he was elected to the Council of the Royal College of Veterinary Surgeons. Here again his worth was quickly recognised. He served on many important committees, being Chairman of the Library and Publications Committee for many years.

Along with his interest in the work of government of the profession, Mr. Holroyd has always taken a very special interest in the National Veterinary Benevolent and Mutual Defence Society, to whose Council he was soon elected and which he continues to serve.

The work of the National Veterinary Medical Association also attracted him and for two years he served on the Council of that body—a position which he reluctantly felt compelled to relinquish when he found he could not find time to meet all the calls on his services necessitated by his many-sided interests.

This, then, is the individual on whom the choice of the Council R.C.V.S. has fallen to fill the highest position in the veterinary profession—a position which cannot be taken lightly for the duties and responsibilities are burdensome, and have a decided tendency to become more so each year, and in this period of national trial we are indeed grateful to a man who so readily and cheerfully assumes the trials and tribulations of the office.

But those of us who know the sterling stuff of of which John Holroyd is made are fully aware that nothing will daunt him, for beneath that quiet and unassuming exterior is a wealth and strength and determination well worthy of the county from which he comes.

No mere academician is the new President. A deep reader with a fine, scientific brain, he is a general practitioner of the best type, running a large general practice in a county which has produced so many famous exponents of the veterinary art. The practice is perhaps singular in that there are three generations associated, for the new President's father who established the practice in 1883, is still "going strong" and plays an active part, and finally his son Henry joined them in 1936. Long may they continue to flourish: but the scientific strain does not cease here, for the daughter, Betty, is a qualified dispenser and doubtless shares the family's wealth of experience in veterinary affairs.

There can be no doubt that a profession which can produce such men is one to be proud of, and we can only hope and trust that despite the cruel affliction of rheumatoid arthritis, so gallantly and uncomplainingly borne for so many years, John Holroyd may be blessed with a happy year of office in which to see his country victorious and peace again restored to a torn and anguished Europe.

"PINING" IN LAMBS ON PERMANENT PASTURE IN N. WALES

The Influence of Intestinal Nematodes upon the Causation of this Condition

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The increase in the sheep population of Wales, apart from breeding ewes, has been most marked in recent years among those under one year old, due to a public preference for lamb over mutton. This, in consequence, has resulted in a change of sheep management, the Welsh farmer to-day producing and selling mostly fat or store lambs. It has likewise given an added importance to the type of grazing capable of producing such lambs, good temporary pasture being recognised as superior, even to some of the best permanent fattening pastures, in this respect. In addition, certain permanent pastures in N. Wales present a serious problem to sheep farmers, who depend, to a large extent, upon such pasture for their sheep grazing, since lambs not only cease to thrive from August onwards but may actually die. Affected sheep have a dejected appearance, run at the eyes, may lose their wool and eventually die or are killed. Ewes and young cattle grazing with them continue to thrive normally. The condition might conveniently be termed "pining" without using the term in any specific sense. Its severity varies both annually and locally, the variation being determined, possibly, by rainfall.

Roberts (1935) drew attention to this problem in a pasture experiment, held at the College Farm, Aber, designed to show by means of live weight gain, the superiority of temporary pasture. He suggested that either mineral deficiency or intestinal parasites might offer a solution to the problem. A simple investigation has been undertaken each year since 1935 to determine the number of abomasal and intestinal nematodes present in the lambs on these temporary and permanent pastures. In 1939 the effect of dosing a proportion of the lambs on each pasture was tested.

Although no attempt is made at this stage to indicate the actual cause of the "pining" it is felt that the time is opportune to present the results of these investigations, together with certain tentative conclusions which it seems reasonable to draw therefrom.

It will be seen from accompanying tables that the "pining" has been present each year, being more marked in alternate years commencing with 1935. It is of interest to note that the summer rainfall in these years, generally speaking, has been lower than usual. The plots consist of (1) a portion (six acres) of a *permanent* pasture, which has been under grass more than 70 years. In an attempt to investigate the possibility of a mineral deficiency, the plot was subdivided into two three-acre lots in 1934, one of which was treated with artificial manures with a view to correcting any possible mineral deficiency of a common order, (2) a *temporary* pasture, now 12 years old, subdivided into two four-acre plots, one of which at the time of seeding received a proportion of wild white clover in the mixture. For the purpose of this paper, reference will be made only to the *permanent unmanured* (P) and to the *temporary wild white* (T) plots. Attempts have been made to stock the plots in accordance with the amount of available growth (carrying capacity) and thus eliminating the possible errors that might arise due to over or under stocking. Thus the *temporary* (T) plot carried five lambs and the *permanent* (P) plot four lambs to the acre, in addition to one cattle beast in each case. The period of the main experiment lasted from May to October in each year, during the whole of which time cattle grazed the plots. In addition to the cattle, Welsh ewes with one lamb were placed on the plots at the beginning of the season and were left until the lambs were ready for slaughter in July. The land was then rested from sheep, about two weeks before newly weaned Welsh Mountain wether lambs were placed on the plots. These lambs usually weighed approximately 45 lb. at the outset and remained on the pasture until ready for slaughter in late September or October.

The lambs were identified and weighed at intervals of approximately three weeks throughout the period July-October, the live weight increase being used as an index of the productivity of the various plots and of the degree of "pining." The lambs were folded in a yard for the purpose of weighing with no regard to the fullness of the rumen at the time. At the time of slaughter the abomasum and small intestine were removed, complete with contents, and brought to the laboratory for the purpose of conducting a worm count. This was done following closely the procedure outlined by Taylor (1934).

Results

A summary of the results obtained in each of the five years 1935-39 is given in Table I. This indicates the average worm burden and the average weight increment in lb. per head per week, of lambs on the two plots.

Table I

Year.	Plot.	Average Worm Counts.		Average gain Increase lb. per Head per Week.
		4th Stomach.	Small Intestine.	
1935	T. W. White	1,447	3,900	0·7
	P. N. Manured	2,200	4,514	0·38
1936	T. W. White	2,786	7,776	1·15
	P. N. Manured	3,814	8,043	0·88
1937	T. W. White	5,355	20,865	0·88
	P. N. Manured	6,825	15,466	–0·33
1938	T. W. White	1,435	7,395	1·36
	P. N. Manured	1,775	7,278	0·91
1939	T. W. White	250	3,750	0·95
	P. N. Manured	2,400	6,366	0·05

The table shows :—

(1) The superiority of a temporary pasture as judged by live weight increase in any one year.

(2) The worm burden though never high, with the exception of 1937, varied appreciably from year to year, but varied less from plot to plot except in 1939, when the abomasum burden was much higher in lambs on Plot P than in those on Plot T.

(3) The variation in worm burden bears no relationship to the variation in live weight increment with the exception of 1939, when lambs showing an appreciably higher worm burden (abomasum) on the Plot P gained less than those with the lower worm burden on the Plot T.

(4) In correlating worm burden to live weight increment several interesting points are to be noted.

(*a*) The general increase in worm burden in 1937 is correlated with a general fall in the average weight increment. This is particularly marked on Plot P, where a loss of 0·33 lb. was recorded. It is to be noted, however, in this year that lambs on Plot T, which gained 0·88 lb. per head per week, had a total worm burden of the same order (26,220) as those on Plot P (22,291) which lost 0·33 lb.

(*b*) Despite the greatly increased number of worms (abomasum) present in 1937 (5,355) the live weight increase of lambs on Plot T was greater in that year than in 1935 when the number was lower (1,447).

(*c*) Although the lambs on Plot P in 1935 carried 2,200 worms in the abomasum and gained only 0·38 lb., those on the same plot in 1936 contained a greater number (3,814) and gained 0·88 lb. This is true also in relation to lambs on the P Plot in 1939, since with a worm burden of 2,400 they gained only 0·05 lb.

(*d*) Although the lambs on Plot T in 1939 had only 250 worms in the abomasum they gained only 0·95 lb. whereas in 1936 and 1938 respectively they carried 2,786 and 1,435 gained 1·15 lb. and 1·36 lb.

(*e*) Whereas lambs carrying 2,400 worms in the abomasum on Plot P in 1939 gained only 0·05 lb., lambs with 2,786 worms on Plot T in 1936 gained 1·15 lb.

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Since the weight records of individual lambs were available it has been possible each year to compare the worm burden and the weight gained by each lamb in the experiment.

Results

The results show that an amazing variation exists between individual lambs on the same plot and adds to the difficulty of drawing conclusions from averages. Table II indicates the result obtained on Plot P in 1937 and is taken as a random sample of very similar findings throughout the plots during the course of the observations.

Table II

Worm Burden and Gain in Lambs on Plot P., 1937.

No. of Lamb.	Gain or Decrease. July–Oct. lbs.	Worm Burden. 4th Stomach.	Small Intestine.	Total.
1	–8	9,800	2,100	11,900
2	4	11,200	16,100	27,300
3	4	19,000	20,100	39,100
4	6½	800	6,000	6,800
5	–4	3,800	7,400	11,200
6	3½	6,600	22,200	28,800
7	4½	8,700	21,000	29,700
8	3	2,300	22,100	24,400
10	1	7,100	24,000	31,100
11	5	2,400	8,700	11,100
12	– ½	6,900	16,000	22,900
13	1	3,300	19,900	23,200
Total	20	81,900	185,600	267,500
Average	1¾	6,825	15,466	22,291

It is seen from the above, that (*a*) whereas there may be relatively little difference in average worm counts as between different plots, there may be great variation between individual lambs on one plot (*e.g.* lambs Nos. 3 and 4); (*b*) whereas an individual (*e.g.* lamb No. 3) may have a worm burden far in excess of the average for the plot it might show a weight increase well above the average for the plot. On the contrary, a lamb (*e.g.* lamb No. 5) showing an actual loss in weight might harbour a smaller number of worms than the average. In fact, an examination of the figures obtained for all lambs in 1937 and 1938 shows that between 60 and 70 per cent. of those having a worm burden above the average had a live weight increase which was either average or above the average for the plot.

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As the observation proceeded, the possible implication of a particular species of nematode in the causation of the problem, could not be overlooked. Hence, each year from 1937 a differential species count was undertaken in addition to the total worm burden of each lamb examined. This work was greatly facilitated by the useful technique and key suggested by Taylor (1935) which was used throughout, in accordance with his recommendations.

Results

A summary of the results is set out in Table III, the main species only being classified.

Table III

Year.	Plot.	Worm (Species) Count. 4th Stomach. Haem.	Ost.	Trich.	Total.	Small Intestine. Trich.	Strong.	Coop.	Nema.	Others.	Total.	Average Gain in lb. per Head per Week.
1937	T. W. White	89	3,247	2,019	5,355	15,865	647	822	3,077	454	20,865	0·88
	P. N. Manured	63	4,553	2,209	6,825	13,972	117	682	882	362	16,125	0·90
1938	T. W. White	5	853	577	1,435	2,696	652	961	2,500	586	7,395	1·36
	P. N. Manured	17	1,171	587	1,775	3,170	139	1,926	1,500	543	7,278	0·91
1939	T. W. White	20	180	50	250	2,050	10	366	1,241	83	3,750	0·95
	P. N. Manured	593	1,110	696	2,400	3,264	—	749	2,160	193	6,366	0·05

This table shows :—

(*a*) *Ostertagia* and *Trichostrongylus* are the predominating species numerically in the abomasum, while *Haemonchus* is least prevalent. In the small intestine *Trichostrongylus* is by far the most important species numerically, while *Cooperia* and *Nematodirus* assume a secondary importance.

(*b*) Although lambs on Plot T in 1937 had approximately the same number of *Ostertagia*, *Trichostrongylus* and *Cooperia* as those on Plot P, the latter showed a great inferiority in their live weight increase. Contrarily, although harbouring approximately twice the number of *Ostertagia* and *Trichostrongylus* the lambs on Plot P in 1938 showed a weight increment only slightly inferior to those on Plot T.

(*c*) That in 1939 there was an increase in the number of *Haemonchus contortus* in lambs on Plot P but that otherwise no particular species appeared in the ascendant on any one plot. Attention has already been drawn to the general increase in 1937.

DISCUSSION

The actual number of worms necessary to give rise to symptoms of disease is a debatable point and it is doubtful whether the number likely to cause a state of poor thriving has even been contemplated ; since no sheep grazing under normal conditions fails to harbour some nematodes the difficulty in assessing accurately a normal burden is obvious. Theoretically, it would seem reasonable to suppose, if actual numbers were the prime factor concerned, that the greater the number of parasites the more likely it would be for clinical symptoms to develop. The results of this work indicate, much as Fraser, Robertson and Ritchie (1936) have shown, that a lamb which is thriving the best may actually contain the larger number of parasites. If the state of thriftiness depends upon the frequency of intake of herbage, which is suggested by these workers, this would seem logical, since it would allow of a more frequent intake of infective larvae. It seems more than likely, however, that lambs on poorer pasture would have occasion to graze more frequently than lambs on good pasture and that hence a greater number of abomasal worms would result. Here again some doubt is cast by the results of these observations, which show, apart from individual variation, no significant difference in worm counts between the two plots. Taylor (1934), on the other hand, shows clearly that lambs on a low plane of nutrition may harbour as many as three and a half times the number of parasites as those on a higher plane, but the results obtained in this investigation entirely fail to substantiate this view. Since it is known that the nutritional status of the *permanent* pasture was slightly inferior to that of the *temporary*, one would have expected this to be reflected in a larger worm burden in the *permanent* pasture lambs. This was not the case. Taylor's (1934) view is that " a deficient diet lowers the resistance of sheep to infection with worms . . . and interferes to a marked degree with the elimination of an infestation already present." On the other hand, Fraser and Robertson (1936) express the view that " the most thriving lambs eat more grass and consequently ingest more larvae worms." In criticism of the latter view the work of Stapledon and Jones (1927) might be quoted, showing that the thriving lambs do not of necessity " eat more grass " than those thriving less. This work tends to indicate that the more often a lamb grazes to satisfy its appetite the less likely it is to thrive since the energy expended in grazing diminishes the ability to thrive. It seems likely then that in the thriving lamb harbouring a large number of parasites one is in fact seeing the operation of another type of resistance—resistance to the *effects* of worm infestation. We have, therefore, on the one hand, resistance to parasitic infestation, *i.e.* the ability of the host to produce an environment detrimental to the development of the parasite. This, according to Taylor, is considerably reduced when sheep are on a deficient diet. On the other hand, we have resistance to the varied effects of the parasites, which may have survived any resistance of the former type. This second type of resistance is not unlike that seen in adult sheep, which may harbour large numbers of parasites without obvious ill-effects. Thus, while an individual lamb may have a diminished resistance to infestation it may have a strong resistance to the effects of parasites. The converse may also hold good, while yet a third lamb may have a weak resistance both to infestation and to the results thereof. In cases of parasitic gastritis, resistance to both infestation and the effects may be at fault, while the less conspicuous cases of parasitic invasion, " pining," may in fact be due not so much to a reduced resistance to infestation as to a reduced resistance to its ill-effects. The fact that in 1937 lambs on temporary pasture continued to thrive despite an average total worm burden of 26,000, which according to Taylor (1935) is sufficient to cause clinical symptoms, lends some support to this theory, for lambs on the permanent plot in that year, harbouring an average of 21,000 worms, not only lost 0·33 lb. per head per week in weight, but were in a number of cases severely affected with " pining." Neither is it an uncommon experience to diagnose a case as " parasitic gastritis " on clinical evidence and find on *post-mortem* examination moderately few worms in the abomasum and intestines, treatment of such sheep with a reliable anthelmintic likewise proving beneficial.

It appears, therefore, that numerically at least, nematodes bear no direct relationship to the " pining " problem under investigation. This is confirmed particularly, because of the wide individual variation between lambs on the same plot and in view of the previously quoted fact that between 60 and 70 per cent. of lambs with worm burdens over the average, continued to thrive at a rate which was average or above average for their respective pasture.

The part played by the different species of nematodes in the causation of clinical symptoms is better defined. Two species are generally regarded as of significance in this respect, namely *Haemonchus contortus* and *Ostertagia circumcincta*. The other commoner species were at one time regarded as of little or no significance in relation to parasitic gastritis. Taylor (1934), however, showed that, under special weather conditions, types of *Trichostrongylus* are capable of producing serious losses, although he regards them as " an infrequent cause of disease in Great Britain despite their association in small numbers with other species causing a particular outbreak." This work has shown the preponderance of *Trichostrongylus* and *Ostertagia* present in all the lambs, and the relatively few *Haemonchus contortus*, regarded as the prime agent in parasitic gastritis. Since *Ostertagia* is acknowledged as a potential cause of clinical symptoms it is of interest to note that a number of lambs bearing large numbers of *Ostertagia* have thrived well. The position is somewhat clarified however by the observations of Fraser

and Robertson (1937) that healthy lambs may harbour as many as 4,670 *Ostertagia*, 2,100 *Haemonchus*. Evidence supporting this is obtained from the present investigation where it was shown that no fewer than 15 lambs contained 4,000 *Ostertagia* or more, the highest figure being 17,864. This lamb, although not gaining weight as well as the average (it was 2½ lb. under the average) nevertheless, showed a definite gain in weight. Seven of these lambs showed an average or above average gain and included one which harboured 13,700 *Ostertagia* and gained 2¼ lb. above average for the plot. Again, therefore, there appears a like anomaly clearly indicating that in this investigation at least, no particular worm species bears any direct relationship to the " pining."

The observed facts relative to worm burdens and species of worm present, leave little room, therefore, to regard the problem as being one of parasitological significance only. The potential significance of resistance or immunity to the problem, does seem, however, to offer some hope of a reasonable explanation and the possible connection of a nutritional factor with this, must not be overlooked.

Based on the assumption that nutrition might play some part, arrangements were made to investigate this in an indirect way, while at the same time checking the conclusions arrived at with regard to worms and their part in the causation of " pining." For this purpose in 1939 half the lambs on each plot were dosed with 30 c.c. of a 2½ per cent. copper-nicotine sulphate solution once every three weeks throughout the experiment. It was thought that the dosed lambs on the *permanent* grass would show a marked gain in weight over the undosed, since the ill-effects of the worms would be excluded and the nutritional status of the pasture would be such as to allow of a gain more comparable with, but even so, not as good as, the *temporary* grass. On the other hand, the difference between dosed and undosed lambs on the *temporary* grass would be small since the nutrition was such as not to impair the lambs' resistance to the effects of parasitism, as occurred on *permanent* grass.

The results of the observation are set out in the following table.

Influence of dosing with Copper-Nicotine Sulphate upon Live Weight Increase (lb. per head per Week).

Plot.	Group.			
	Dosed.		Undosed.	
	Gain.	Worms.	Gain.	Worms.
Temporary ...	1·20	2,370	0·95	4,000
Permanent ...	0·77	7,560	0·05	8,760

Here it is seen that dosing has had the effect of increasing the gain in lambs on the *permanent* plot by as much as 0·72 lb. per head per week and on the *temporary* plot by 0·25 lb. per head per week. Again, the difference between the *dosed* lambs on the two plots is 0·43 lb. per head per week and the *undosed* 0·90 lb. per head per week.

One might, with some justification, regard the difference of 0·43 lb. per head per week in dosed lambs on the two plots as an index of the superiority of the temporary herbage from a simple nutritional point of view, while the difference of 0·90 lb. represents the combined effects of simple nutrition plus " pining." The difference of 0·72 lb. per head per week on the *permanent* plot indicates the difference caused by the effects of the parasites, numerically no greater than in lambs on *temporary* pasture, where since the immunity to these effects is not impaired, the difference is only 0·31 lb. per head per week. Since, therefore, it has been shown that worms *per se*, neither numerically nor specially appear to have any direct bearing on the problem of " pining," one seems justified in assuming from these results the partial confirmation of the contention which it was set out to prove by dosing.

Attention at this stage must be drawn to the effect of dosing upon the worm population. From the table it is seen that the number present in the dosed lambs on each plot is almost equal to that in the undosed group. It must be pointed out, however, that a full fortnight elapsed between the last dosing and the killing of the lambs. This in itself, however, is insufficient to account for the contradictory results obtained. The writer is, however, unable to give any reason in explanation of this happening. How then can the obvious beneficial effects of treatment be explained ? Herein lies considerable difficulty, unless it be assumed that the doses of copper-nicotine sulphate corrected a deficiency of copper, that deficiency being at the root of the " pining " problem. Experiments are being arranged to clear up this point this year. Meanwhile, the explanation must remain in doubt although the writer understands (private communications) that other workers have experienced similat happenings following the dosing with copper-nicotine sulphate.

Conclusions

It is hoped that the continued work will offer concrete proof of the facts partially confirmed by the dosing, but it seems justifiable to draw certain tentative conclusions at this stage. Thus, it seems likely that provided the nutritional status of a pasture is such as to maintain an immunity in the lamb to the effects of parasitism, " pining " is unlikely to occur, except in an outstanding season of severe summer drought when " pining " gives way to the actual clinical entity which is recognised as parasitic gastritis. The nutritional status of *permanent* pasture appears inadequate in this respect and consequently, although harbouring an approximately equal number of worms as found in lambs on the better pasture, the *permanent* pasture lambs succumb to " pining." The term " pining " cannot therefore be regarded as indicating a pathological state due entirely to parasitism, neither is it claimed that it can be regarded as strictly an expression of malnutrition for, provided conditions are such that a certain indeterminable threshold relative to both factors is respected, the individual can thrive normally. On the other hand, it is conceivable that if the threshold is overstepped in either direction, a state of parasitic gastritis on the one hand or malnutrition on the other, will be manifest clinically. This conclusion has due consideration for individual variations generally in lambs with regard both to parasites and immunity thereto, since the work has indicated an enormous variation in worm burden and an ability to thrive which is in no way relative to that burden. It is tentatively suggested, however, that continued work

(*Concluded at foot of column* 1, *page* 512.)

THE VETERINARY RECORD
July 13th, 1940

THE PROBLEM OF COASTAL PRACTICES

THE circumstances of war have placed the country in a condition where defence of our long coast-line against invasion by sea has assumed a degree of importance for which we must go back to Napoleonic times to find a precedent. Military necessity may well involve some displacement of that part of the population which cannot assist and may impede defence.

It has come to our notice that, among others whose peace-time occupation is no longer encouraged or even possible in some coastal districts, are those veterinary practitioners whose patients were principally small animals. Movement of some farm stock inland from the more vulnerable districts has been freely discussed and some evacuation has already occurred. It is therefore clear that many of our members must have destroyed large numbers of potential patients at the request of owners who have found their pets an embarrassment and that they will no longer have the same numbers of farm animals among which to practise. Many practitioners in coastal districts are now virtually unemployed and have no alternative centre to which they can move for the purpose of starting afresh without seriously competing with colleagues who are established in other areas. In any case the total volume of the small animal population has been reduced materially and will not be replaced until we have won the war.

Whose is the responsibility to extend practical aid to the practitioners who are hit by circumstances beyond their control?

It is our duty as long as we are reserved to remain reserved, but the authority which thus reserves services should produce plans to assist those affected by the reservation as well as the wider plans to cover the full use of the profession at these critical times. Again, many of the practitioners now involved have given their services freely and willingly to the National A.R.P. for Animals Committee and have seen the need for their contribution disappear. They do not call for charity but for occupation; to serve the country in some capacity until their special qualifications are in demand again.

The problem presses for immediate and organised solution.

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VACCINATION FOR CONTAGIOUS ABORTION

Our attention has been drawn to a sentence in our editorial appearing under the above heading in our issue of June 15th, which should perhaps be clarified.

The sentence read as follows: "There is another which cannot safely be used on pregnant cattle but which confers a higher degree of immunity, and causes no agglutination reactions to the tests ordinarily used—a feature which would complicate eradication schemes."

The fact that this strain does not cause any agglutination response is in itself an obvious advantage because no immediate interference with eradication schemes would be caused by its use.

The point in mind, however, when our sentence was written was that should such a strain become altered and virulent in the animal body the usual indication, *viz.*, an agglutination response, would not be forthcoming and that, therefore, the use of such a vaccine might in the long run seriously interfere with eradication schemes. We now understand from our correspondent that if the strain referred to above should become altered and virulent whilst in the body of the cow it produces at the same time an agglutination response to the ordinary tests. Accepting this statement, it is clear that the fact that it produces no agglutinins during the modified or vaccinating state is a definite advantage, and that the vaccine prepared with it should be of very considerable practical value.

CHANNEL ISLANDS CATTLE

"Following the news of the evacuation of the Channel Islands it was learned in London this week," states the *Farmers' Weekly* of July 5th, "that thousands of growers and breeders have chosen to remain on their farms. Of the 90,000 population of the Islands some 45,000 have been evacuated to the North of England. The remainder (there are 25,000 on Guernsey alone), principally small farmers, stayed to face the invader rather than to leave the result of their year's work.

"When the news of the completion of the evacuation was received in London the English Guernsey Cattle Society immediately made emergency arrangements to receive into attested herds any cattle of their breed which could be saved from the Island. The Society has received a cable from the American Guernsey Club expressing deep concern as to the position and offering to do anything they can to assist.

"The occupation of the Islands cuts off the fount of all supply of home-bred island cattle. It is a little over 150 years since Channel Island cattle were first imported in numbers to this country, and since then many of the best breeders have returned year after year to the Islands to buy. But the traffic has been one way. Jersey has forbidden the importation of live cattle from outside for 200 years, and for a long time similar restrictions have been imposed in Guernsey. Only by these means have the breeds been kept completely free from tuberculosis in their natural home."

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will show that the explanation of "pining" which appears superficially as an indissoluble complex of parasitism and nutrition, will eventually resolve itself fundamentally into a problem of nutrition, having a direct influence upon parasitic immunity of a type described as resistance to the effects of parasites.

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CLINICAL COMMUNICATION

The Preparation of Smears from Tuberculous Sputum

A. C. DIXON, M.R.C.V.S.,
BERKHAMPSTED, HERTS.

The accurate diagnosis, during life, of clinical tuberculosis has always presented considerable difficulties. From the point of view of the general practitioner, the question is largely of academic interest. The screw cow will die, and if the owner is informed of this fact, it does not matter a great deal what produces the condition. A *post-mortem* examination will be a guide as to the subsequent steps required to protect the remainder of the herd.

The case of those administering the Tuberculosis Order is very different. It is essential to be able to certify that tuberculosis exists in a particular animal and that such symptoms as are shown are due to that cause. The tuberculin test is of little use in this respect as it only shows the existence of disease. At the best it only eases the mind of the inspector on his way to the *post-mortem* examination. He knows that he will not have to certify that tuberculosis did not exist.

Considering these circumstances, it becomes plain that improvement in the technique of the demonstration of the organism is the clear way to improve the methods of diagnosis. Without finding the organism the diagnosis is largely guess work and few of us are prepared to stand up to a *post-mortem* examination after a wild shot in the dark. There are certainly a number of cases which are rightly condemned on clinical grounds because clinical symptoms are overwhelming. There are a great many more which cannot be condemned on these grounds but which would be condemned if the organism could be demonstrated.

The following method has been used by the author, in examining sputum, with some success. Sputum consists of micro-organisms, cellular débris, mucus and foreign material from the throat and mouth. Further, it often contains foreign particles which contaminate it after it is voided from the mouth. The mucus soon dries and the whole becomes a hard flake stuck to the wall. The process consists in collecting samples in a test tube containing lime water. The lime water dissolves the mucus which comprises a large part of the specimen. There then remain, out of solution, micro-organisms, cellular débris and foreign matter. The foreign matter is next removed by straining through fine gauze. The liquid is then centrifuged and a smear made from the deposit. The smear consists of micro-organisms and cellular débris.

The lime water smear has the following advantages. The organisms are greatly concentrated on the slide. The material can be spread out easily in a uniform smear. Samples can be taken where there is no fresh sputum. A number of flakes of sputum can be taken in one tube. These represent sputum voided by the animal over a period of many days and are far more likely to show the organism than is a single sample.

In actual practice, the following points are of interest. A number of 15 c.c. test tubes are carried in the car. These are half filled with lime water and each bears a clean, plain label. Sputum can be collected from any animal from which it has been voided during the previous week or so. It is often obvious at a glance that the wall in front of one animal is dirtier than it should be when compared with the rest of the shed. On examination this dirt is found to be dried sputum. This material is just as suitable for examination as are fresh samples. The dry flakes should be removed from the wall and allowed to drop into the tube. If these are heavily contaminated with lime or whitewash the staining is not affected. If a fresh sample is found it should be included. It is, of course, of the utmost importance to be sure that no other animal has used the stall.

On arriving home, it will be found that the flakes have become soft and swollen, but have not disintegrated. These can be broken up by violent shaking. The tubes are then left for an hour or so to enable the rest of the mucus to dissolve. A piece of surgical gauze, about 2½ inches square, is next placed over the top of a centrifuge tube and secured with an elastic band. The sample is poured into the tube through the gauze. This is filled up with water and centrifuged. The smear is made from the deposit and stained in the usual way.

ABSTRACTS

[GOAT VIRUS VACCINATION IN THE CENTRAL PROVINCES AND BERAR (INDIA) (Final Report). BACHAN SINGH. (1939.). *Indian J. vet. Sci.* **9.** 278-298.]

Rinderpest is responsible for 60 per cent. of the losses among cattle in India. The researches undertaken originally by Dr. Edwards at the Muktesar Institute from 1926 to 1928 proved the efficacy of vaccination by means of " goat-virus alone " for the protection of the indigenous cattle of India, which, as is known, are endowed with a relatively high degree of natural immunity. The method was first successfully applied by the late Major Stirling (1930) (who had been Dr. Edwards's colleague at Muktesar) in the field on a large number of animals in the Central Provinces. After Major Stirling's death the work was pursued under the direction of Mr. G. D. Pani, with the assistance of ten graduates from the Indian veterinary colleges.

Virus originally obtained from the Muktesar laboratory in August, 1935, was propagated locally in goats, and has since undergone 253 passages without any changes in virulence or in immunological properties for cattle and buffaloes. Goat virus was employed in the localities of 56 accidental outbreaks of rinderpest. Save in one village where a number of cattle were vaccinated with tissue vaccine containing the Muktesar strain, the results were very satisfactory. For the first time, therefore, vaccination by means or goat virus alone was employed as a protective measure in the scene of outoreaks and it was found that it could well be used to replace the use of serum.

Several experiments were carried out to test the duration of immunity conferred by the goat virus, using highly virulent bull virus for the test inoculations. The longest period yet found extended to 3½ years.

The general conclusions drawn from the field trials were :—

(1) Goat-adapted virus (in blood and tissues) of the Muktesar strain is virulent for goats but possesses only a low degree of virulence for Indian country-bred (i.e., " zebu ") cattle.

(2) The Muktesar strain of virulent goat blood has been found to be equally satisfactory for the native buffaloes of the province.

(3) An adapted strain of local origin was found to be completely satisfactory for use upon cattle after the 40th passage in goats and for native buffaloes after the 24th passage.

(4) Tissue vaccine prepared from both the Muktesar and local strains was used on a large scale.

(5) Both kinds of vaccine, namely, both blood and tissue vaccine, proved efficacious in the scene of outbreaks of rinderpest.

(6) For imported cattle and for milch buffaloes (Murrah and Surti breeds) simultaneous inoculation with goat virus and anti-serum is recommended. The risk of a severe reaction and loss of milk is thereby avoided.

(7) The shortest period over which immunity has been proved to last has been 3½ years, and it is probable that it extends beyond this limit.

(8) Besides the very small cost of the procedure, the great advantage obtained in using goat blood and tissue vaccine resides in the fact that when preventive vaccinations are carried out in an area the chances of disease spreading from vaccinated to non-vaccinated animals are very slight.

The following table displays the number of vaccinations carried out with the goat-adapted virus from March 15th, 1935 to March 14th, 1938, using the different strains of virus.

Years.	Number of Villages.	Blood Virus.		Tissue Virus.		Serum and Vaccine.	Totals.
		Muktesar Strain.	Local Strain.	Muktesar Strain.	Local Strain.		
1935–36	414	111,982	—	3,858	—	1,275	117,115
1936–37	806	71,278	27,526	22,513	19,141	719	141,177
1937–38	733	21,253	19,241	44,565	39,170	—	124,329
Total	1,953	204,613	46,767	70,936	58,311	1,994	382,621

* * * * *

[THE NUTRITIVE VALUE OF PROTEINS FOR MILK PRODUCTION. V.—THE EFFECT OF HIGH TEMPERATURE AND SEASON ON THE NUTRITIVE VALUE OF GRASS PROTEINS, THE SUPPLEMENTARY EFFECT OF THE MAINTENANCE RATION ON THE PRODUCTION RATION, AND THE EFFECT OF FEEDING A HIGH-PROTEIN RATION. Morris, S., and Ray, S. C. (1939.) *J. Dairy Res.* **10.** 165-185 (11 figs. 10 tables. 32 refs.).]

Dried grass which had been scorched by raising the temperature of the air in the drier from the normal of 300° C. to one of 350° C., did not appear to have lost any of its nutritive value when incorporated in the production ration of six recently-calved Ayrshire cows, the milk yield being maintained on a normal curve for the periods during which it was substituted for the product dried at 300° C. There was, however, some diminution of retention of the sulphur compounds of the grass dried at 350° C. Dried grass cut during the third week of September was found to have an inferior nutritive value to that cut during the spring, its introduction into the production ration being followed by a fall in milk-yield and a rise in urinary-N excretion.

In order to determine whether the maintenance ration might exert a supplementary effect upon the production ration, three recently-calved Ayrshire cows were provided with a maintenance ration of oats, beet-pulp and either hay or straw. The ration containing hay supplied more than the maintenance requirements of lysine, but during the periods when straw was fed, sufficient lysine was added to the diet. These maintenance rations were fed in combination with production rations of both high and low protein values, and the supplementary effects were observed in the variation in milk-yield, falls in which occurred when the hay was replaced by straw, and when the high protein production was employed.

A. N. W.

* * * * *

[AN INVESTIGATION INTO THE NATURE AND CAUSE OF A DISEASE IN NEW-BORN MERINO LAMBS AFFECTING THE THYROIDS AND NERVOUS SYSTEM. Williams, J. G., Steyn, D. G., and Groenewald, J. W. (1938.) *J. S. Afr. vet. med. Ass.* **9.** 182-187.]

In an affected flock a few of the lambs were still-born, but the majority showed varying degrees of paresis and spastic paralysis. The thyroid gland was greatly enlarged, in some cases being ten times the normal size. The gums and tongue were dark pink in colour. The mortality in affected lambs was 100 per cent., all of them dying within a few days. Microscopic examination of the thyroid glands did not reveal any constant or characteristic lesions. Bacteriological, toxic or hereditary causes were excluded and the disease was considered to be due to some form of deficiency in the ewes resulting from the very poor state of the pastures in which they grazed.

Five affected lambs treated with potassium iodide and calcium lactate failed to recover. It is suggested that parasitic control and the provision of green food or phosphatic and protein licks would prevent the condition.

J. F.

The Royal Dublin Society now announces that it has decided to cancel the horse show owing to the increasing gravity of the international situation and the entire absence of trade for hunters or for horses likely to make hunters.

All the other activities of the society, including the mare premium scheme, will be continued as far as circumstances permit, and the Council calls on all members to maintain their interest in the Society's work.

IN PARLIAMENT

The following are among the questions and answers recently recorded in the House of Commons:—

FARMERS (FINANCIAL AID)

Sir A. BAILLIE asked the Minister of Agriculture whether he is satisfied that farmers at the present time command the financial resources to expand production; and what steps are taken to meet cases where farmers are finding difficulty in this respect?

Mr. HUDSON: I think that the majority of farmers at the present time possess sufficient financial resources or can obtain the necessary accommodation. Farmers who find difficulty in doing so may obtain assistance from County War Agricultural Executive Committees in various ways.

POULTRY (DAMAGE BY FOXES)

Mr. PARKER asked the Minister of Agriculture whether he is aware that many farmers and smallholders are now trying to keep poultry on the extensive system; that foxes are taking a large toll from them; and whether he will take further steps to destroy foxes to safeguard this form of food production?

Mr. HUDSON: My right hon. Friend has no evidence of widespread damage to poultry by foxes, but he is keeping the position under constant review and will not hesitate to exercise his powers under the Defence Regulations if specific cases are brought to his notice.

GREYHOUND RACE MEETINGS

Mr. BUTCHER asked the Secretary of State for the Home Department the number of police engaged each week in controlling traffic, regulating crowds and protecting officials at dog race meetings in the Metropolitan area; and whether he will prohibit all such meetings to release the officers so engaged for more useful service?

The PARLIAMENTARY SECRETARY TO THE MINISTRY OF HOME SECURITY (Mr. MABANE): Fifty-six Metropolitan police officers were engaged for between two to three hours each, during the week ended June 29th, in controlling traffic and members of the public outside greyhound race meetings. No police are engaged to protect officials. My right hon. Friend does not consider that he would be justified in prohibiting these meetings on this ground alone.

Mr. BUTCHER: Would the hon. Gentleman take the sense of the House in this matter?

Miss RATHBONE: Is the hon. Gentleman aware that a large part of the supply of grain is used in feeding greyhounds?

ROYAL COLLEGE OF VETERINARY SURGEONS

Membership Examinations, 1940

LIST OF SUCCESSFUL CANDIDATES

London

FIRST YEAR:

Ali, S. M.
Aspinall, K. W. (B)
*Bateman, H. N.
Bowditch, E. B. (B)
Burke, N. F. S. (C)
Button, A.
Callear, J. F. F.
Daniel, W. J. (B)
Das, M. S.
Dingle, P. J. (C)
Fawbert, Miss D.
Fry, F. C. (B)
Gahan, F. J.
Goulstone, R.
*Grater, G. S.
*Harvey, D.
Knowles, J. R.
*Sambrook, P. M. F.
Smith, E. K. (B)
Stafford, G. C.
Thomsett, L. R.
Threlkeld, J. M. (C)
*Underwood, D. B.
*Williamson, E. I.
Wood, J. G. P. (C)

*Denotes second class honours.
(C) Denotes Credit in Chemistry.
(B) Denotes Credit in Biology.

THIRD YEAR:

Arnold, R. M. (A)
Balankura, K. (A)
Birkett, Mrs. B. G.
Blackler, P. M. B.
Bowen, P. D. G. (A)
Brain, P. G. P. (A)
Bryce, Miss M. R.
Bullen, J. J.
Clark, Miss C. L.
Cooke, C. D.
Corsan, Miss M. I.
Dyke, Miss B.
Eastwood, R.
Edwards, F. B. (A)
*Field, H. I.
Fletcher, F. K.
French, T. H. (P)
Frost, H. H. (A)
Gabb, K. R.
Grieve, Miss C. G. (P) (H)
Heeley, D. M.
Howson, Miss G. R.
Kendall, S. B. (H)
Landau, M. (H)
Leach, T. M.
Luke, W. S.
McCrea, M. R.
Maxted, Miss J. E.
Morgan, T. J.
Nye, S. S. (A)
Ogle, R. S.
Pybus, J. S.
Rickard, S. C.
Ritchie, Miss M. D. (H)
Robins, J. H.
Stones, L. C. (A)
Taylor, A. M.
Taylor, W. M.
Thomson, W. W.
*Thorne, A. L. C.
Trump, H. L.
*Vaughan, A. W.
Weitz, B. G. F. (A)
Welch, A. G.
Welch, Miss R. (A)
Westcott, E. J.
Williamson, T. F.
Witherington, D. H. (H)

*Denotes second class honours.
(P) Denotes Credit in Pharmacology.
(A) Denotes Credit in Anatomy.
(H) Denotes Credit in Hygiene.

FOURTH YEAR:

Bagenal, B.
Bezant, Miss K. M.
Bhal, P. N.
Blaikley, G.
*Blair-Fish, P. R.
Butcher, B.
Buxton, A.
Byles, Miss M. D.
Chandra, B.
Chandra, V. P. (Paras)
*Dobinson, J.
Dyke, J.
Foster, A. V. B. (Path.)
*Hindle, J. R.
Jones, O. G.
Jordan, F. T. W.
Juneja, G. C.
Kirkwood, A. K.
Lake, D. P. (Paras)
*Lall, H.
Lewis, E. F.
McCullagh, A. F.
*Macgregor, D. E.
*Mares, R. G.
Markham, A. E. G.
Mastin, V. L.
Morrison, A. M.
Morrison, J. M.
Newhook, J. C.
Osborn, Miss J.
Pembrey, H. G.
Phillips, R. N.
Pierce, A. E.
Rawlinson, W. E. (Paras)
Reynolds, Miss P. M.
Scott, D. J. P.
Sheriff, D.
Sindrey, R. J. (Paras)
Smith, H. W.
Stainton, Miss S.
Threlkeld, T.
True, A. J.
Turner, R. J.
Vale, R. H.
Vernon, J.
Weatherhead, G. C.
Wickens, J. T.
Wooldridge, R. L.

*Denotes second class honours.
(Path) Denotes Credit in Pathology.
(Paras) Denotes Credit in Parasitology.

FINAL EXAMINATION:

Barnard, G. M.
Beale, Miss J. H. M.
Beament, R. A. A.
Bell, F. R.
Birkett, H.
Blampied, P. H.
Butler, C. A.
Clarke, E. V.
Cotchin, E.
Darne, A.
Dorman, A. E.
Foden, C. A.
Fox, Miss W. E.
Greeves, D. H.
Hartley, W.
Huckle, Miss B. M.
Hughes, A. P.
Jones, Miss K. M.
Joss, G. E.
Kyaw, M. H.
Leech, F. B.
Lewis, R. W. E.
Lipscomb, Miss S. C.
Makinson, J. B.
Mayor, O. Y.
Morgan, D. G.
Parsons, J. H.
Peters, E. G. E.
Plumbly, G. P.
Regnauld, Miss L. A.
Russell, Miss A. F.
Salmon, Miss S. M.
Scott, C. E. S.
Steel, P. G.
Stephens, A. D.
Stewart, Miss B. M.
Ticehurst, R. E.
Wilde, J. K. H.
Willett, D. N.

(To be continued with Second Year results and those at other centres)

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

July 19th.—Summer Meeting of the Eastern Counties Division, N.V.M.A., at Ipswich, 2.30 p.m.

July 22nd.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.

July 26th.—Meeting of the Royal Counties Division, N.V.M.A., at Reading, 2.30 p.m.

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National A.R.P. for Animals Committee

Casualty Report Forms

During recent air raids upon this country, the National A.R.P. Animals Service has many times been called into action, with the result that numbers of livestock have been rendered first-aid or placed beyond suffering. A considerable proportion, too, of the carcases have been salvaged under the joint scheme established between the Veterinary Services, the National Farmers' Union and the Ministry of Food, whereby the farmer recovers some small reparation for the loss sustained.

In order that a detailed record of all casualties may be compiled, and that enquiries received from other official Headquarters can be answered, a full report should be submitted to the Chief Executive Officer without undue delay. The form reproduced below indicates the lines on which these reports should be based. Similar forms will be supplied in all cases where casualties have occurred, and they should be made out in duplicate, the original being retained by the owner and the duplicate forwarded to these Headquarters. The owner will then be in possession of a certified statement of the losses he has sustained and be in a position to place before the Government full details for consideration.

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The majority of veterinary surgeons are assisting the National A.R.P. for Animals Committee very thoroughly, but unfortunately there are a few who are finding it difficult to give to the Service the attention it really needs. For example, some members are not arranging the advisable minimum of first-aid posts and training the first-aid workers. This is having an unfortunate effect upon the Public and is laying the profession open to unjustifiable criticism. It is hoped that veterinary officers themselves will do all they can to further the Service.

It is advisable that Divisional Veterinary Officers should share in the giving of lectures in their own areas, despite the fact that many Regional and County Veterinary Officers are somewhat loath to do too much in areas where another practitioner is normally most active.

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Insurance of Motor Cars

We understand from the Chief Executive Officer that the Members of the Accident Offices Association, *i.e.* the tariff insurance companies, have agreed to the following with regard to use of cars on behalf of the National A.R.P. for Animals Committee :—

1. Cars owned by veterinary surgeons may be used without additional premium by the persons permitted to use the car in connection with the veterinary surgeon's practice under his Policy.

2. Cars belonging to volunteers will be covered while used for the National A.R.P. for Animals Committee without additional premium if the use is confined to the Insured or members of his family. If other persons are to use the car for the Committee's purposes an additional premium of 10 per cent. will be required. In both cases the Policy would cover transport of small animals.

Date.	Number and Class of Animal Involved.	Approx. Age.	Cause. (*State Numbers.*) H.E.	I.	M.G.	G.	Nature of Injury.	Action Taken. (*State Numbers.*) T.	S.	D.	Approx. Value. £	Remarks.

H.E. = High Expl. I = Incendiary B. M.G. = Machine G. G = Gassed.

T = Treated. S = Salvaged. D = Destroyed.

Owner's Name .....

Address .....

.....

Report made by .....

Address .....

.....

Valuation assessed by * Veterinary Surgeon.
Auctioneer.
Slaughterhouse Agent.
Parish Animal Steward.

* *Please delete designations which do not apply.*

The above arrangements are understood to have been reported to the non-tariff companies by the Accident Offices Association and in the opinion of the Chairman of that Association, it will be found that those companies will act on similar lines. It is therefore assumed that all non-tariff offices will comply. Lloyd's Motor Underwriters Association has confirmed its compliance: it has not been possible, however, for the Committee to communicate with *all* non-tariff offices on this subject, and members holding non-tariff policies are advised to apply to their respective Insurance Companies for confirmation that they have agreed to adopt a similar attitude to that laid down by the Accident Offices Association and explained above.

The position with regard to ambulances, lorries, floats and other commercial vehicles is being investigated and a further note on the subject will appear as soon as possible.

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Emergency Petrol Supplies

Arrangements have now been made for the issue from Headquarters, 36, Gordon Square, W.C.1, of petrol vouchers for use at times of emergency, to Veterinary Officers of the National A.R.P. for Animals Committee and those assisting them in their technical organisation, in the counties of Hants, Berks, Bucks, Surrey and Oxon. The arrangements are similar to those announced for the London region, *i.e.* vouchers will be issued to those who have already used petrol on behalf of N.A.R.P.A.C. when a claim is made to the County or Deputy County Veterinary Officer. Individuals in portions of counties falling within the region of the London Passenger Transport Board should, however, apply direct to Headquarters at Gordon Square.

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Will veterinary surgeons who have received equipment from N.A.R.P.A.C. delivered in crates kindly return these to N.A.R.P.A.C. Despatch Department, P.D.S.A. Sanatorium, Ilford, as soon as possible. Further deliveries are being gravely delayed owing to the increasing difficulty of obtaining wood for making crates.

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R.C.V.S. OBITUARY

Millington, T. G., Capt., M.R.C.V.S., D.V.H., 16, Somerville Road, Wigan; Superintending Inspector, Animal Health Division, Ministry of Agriculture and Fisheries. Graduated Liverpool, December 10th, 1910. Died June 30th, 1940; aged 52 years.

Captain T. G. Millington, M.R.C.V.S., D.V.H.

Captain Tom Gordon Millington, whose death, which occurred suddenly, we record with much regret, was the third son of the late Alderman and Mrs. Millington, and grandson of the late Alderman Robert Richards, J.P., who was Mayor of Wigan from 1896 to 1898. He took his veterinary degree at Liverpool University in 1910, and represented the University at Rugby Union football and cricket. In 1911 he was appointed assistant bacteriologist to the Southern Rhodesian Government, and resided in Salisbury. He returned to England in 1914 and joined the staff of the Ministry of Agriculture but at the outbreak of war he hastened to join the Royal Army Veterinary Corps, seeing service on the Western Front right through the campaign to 1918. After demobilisation he resumed his duties with the Ministry of Agriculture. He was for some years Superintending Inspector for Wales and resided at Aberystwyth. At the time of his death he held a similar position in Lancashire and Cheshire.

In a tribute the *Wigan Observer* states, " Captain Millington had a charm of manner which endeared him to all who came into contact with him, and all who knew him will mourn his death." He married Miss Heyes, sister of the late Captain J. P. Heyes, F.R.C.V.S., of Wigan, and is survived by his widow and a son and a daughter, to whom, on behalf of Captain Millington's colleagues in the veterinary profession, we extend sincere sympathy.

The Funeral

The funeral took place on Wednesday, July 3rd. A short service was held at the house, at which the Rector (Canon W. O. Hunter Rodwell) officiated, and was followed by a service at the Wigan Parish Church, at which the Rector again officiated. The interment was at Wigan Cemetery. The following members of the profession attended: Mr. J. Holroyd (President, Royal College of Veterinary Surgeons), Mr. E. C. Lloyd (Deputy Chief Veterinary Officer, Ministry of Agriculture and Fisheries), Mr. H. R. Hewetson (President, Lancashire Veterinary Association), Mr. G. O. Davies (Hon. Secretary, Lancashire Veterinary Association); Messrs. T. Wilson, F. H. Leech, J. Brennan, J. W. Wilson, A. L. Mullin, J. O'Kane, J. C. Baird, C. T. Trevers and C. F. Shawcross.

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PERSONAL

J. R. M. Innes, D.Sc., Ph.D., M.R.C.V.S.

Mr. J. R. M. Innes has been awarded a D.Sc. degree from the University of Edinburgh. He has taken up a newly-created post with Imperial Chemical Industries Limited and will carry out research work as an experimental pathologist working along lines with a definite chemotherapeutic bias.

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Marriage.—Milligan—Taylor.—The marriage took place, by special licence, at St. Peter's Church, Pimperne, Blandford, on June 29th, 1940, by the Rev. C. L. Richards, of William Alfred Milligan, M.R.C.V.S., D.V.S.M., elder son of Mr. Alfred J. Milligan, M.R.C.V.S., and the late Mrs. Milligan, Annan, Dumfriesshire, to Hannah Margaret, daughter of the late Mr. W. R. Taylor and Mrs. Taylor, Pimperne, Blandford, Dorset.

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LIVERPOOL SCHOOL OF VETERINARY SCIENCE

Degree Examination Results

The following are the University of Liverpool, School of Veterinary Science, Examination Lists for June, 1940, in connection with the University Degree of B.V.Sc.:—

Fourth Examination.—Bee, B. R., Clay, H. A., Edwards, C. M., Foster, J. L., Gibson, T. E., Jones, D. K., Picken, W., Wilson, A. A.

Passed in Separate Subject (Veterinary Parasitology and Entomology).—Hopkins, C. D., Shaw, I. G., Stabler, A. B. O.

Third Examination.—*Part II*: Bolton, J., *Boundy, T., *Carlyle, A., Dugdill, R. S., *Jones, E. B., Jones, J., Jones, W. M., Jubb, Sylvia C., McCreanor, Mary, McLennan, I. S., *Richards, R. A., *Unsworth, K., Wynne, M.

*With distinction.

Third Examination.—*Part III*: Bolton, J., Boundy, T., Carlyle, A., Dugdill, R. S., Jones, E. B., Jones, J., Jones, W. M., *Jubb, Sylvia C., Kerr, P. A., McCreanor, Mary, McLennan, I. S., Mahmoud, A. H., Richards, R. A., *Unsworth, K., Wynne, M.

*With Distinction in Genetics.

First Examination.—*Part I* (*Chemistry*): Adams, A. D., Cooper, E., Done, J. T., Fleetwood, J. D. L., Goates, Lorna K., Hall, C. A., Hawkins, R. H., Hewitt, S. L., Hughes, A. L., Humphreys, J. R., Jones, C., Littlejohn, Annie, McMillan, D. H., *Milnes, Joan N., Miscampbell, K. I., Parkinson, W. G., Pinsent, P. J. N., Roberts, T. O., *Roebuck, E., Taylor, L. A., Tunstall, E. T., Wynne, I. M.

*With Distinction.

(To be continued)

N.V.M.A. Pension and Family Provision Scheme

Through the courtesy of Mr. Walter Herriot, who arranged with the Legal and General Assurance Society Ltd., the Pension and Family Provision Scheme for members of the National Veterinary Medical Association now in operation, we are enabled to publish in this issue a draft addendum to the scheme giving the new rates and conditions under which future policies will be issued in consequence of the necessity of bringing premium rates under the scheme into line with the Society's decision, operative from July 1st, of increasing rates of premium for the principal classes of life assurance. Existing policies will remain unaffected. We are advised that this new basis, which includes Home War Risks to the extent of the capital sum benefit, will be applicable to *future* business under the scheme at the present time, in respect of lives where the Assurance Society are quite satisfied that they are in reserved occupation, and where there is no immediate prospect of their being called upon to serve in the Forces, or where the individual concerned is likely to volunteer. To the latter extent, each case, therefore, will be judged on its merits, but in any case where there is any prospect of the individual going into the Forces, any policy issued would completely exclude War Risks.

DRAFT ADDENDUM
PENSION AND FAMILY PROVISION SCHEME

Revised Rates of Premium

As from June 1st, 1940, the premiums shown in this booklet will be increased as under-noted:—

		£	s.	d.
Retirement age 60	Add	1	7	11*
	„	0	14	2†
	„	0	7	2‡
	„	0	2	6§
Retirement age 65	„	1	4	2*
	„	0	12	3†
	„	0	6	2‡
	„	0	2	1§

*To all annual premiums shown in the table.
†Half-yearly. ‡Quarterly. §Monthly.

Policies effected by civilians at the new rates of premium will include war risks within the United Kingdom to the extent that in the event of death arising from *that* cause an immediate payment of £620 in connection with policies where the retirement age is 60, or £537 where the retirement age is 65 will be made, the Family Provision and Widow's Pension benefits being cancelled.

All policies will bear the following clause:—

War and Aviation Condition

Notwithstanding anything within contained to the contrary, it is hereby declared that if the death of the assured shall be attributable to the effects of warfare (whether war be declared or not) sustained within the terra firma of the United Kingdom there shall be payable only the capital sum under Item (1) in the within Table of Benefits but such sum shall be payable on the death of the assured.

It is further declared that if the death of the assured shall be attributable:—

(1) to the effects of warfare sustained outside the terra firma of the United Kingdom (whether war be declared or not) or

(2) to an aerial ascent or to air travel of any form or description as a passenger or otherwise except as an ordinary fare-paying passenger in an aeroplane regularly plying for hire on a recognised air route wholly in the United Kingdom,

the amount payable under this policy shall be limited to a sum being either

(*a*) the total amount of premiums (exclusive of extra premiums) paid hereunder, less any sums paid by the Society in respect of bonuses in cash, portions of sum assured or of surrender value or otherwise, or

(*b*) the surrender value of the policy

whichever shall be the greater, but shall not exceed in any case the sum assured stated herein.

* * * * *

PROTECTION OF WINDOWS

A Memorandum giving advice on the protection of windows is issued by the Ministry of Home Security, A.R.P. Department (Stationery Office, 4d. net). The following materials have been found to resist all fragments striking at right angles from a heavy bomb bursting 50 ft. away:—

1½ in. thickness of mild steel plate or plates.
12 in. thickness of reinforced concrete.
13½ in. thickness of sound brickwork or sound stonework.
15 in. thickness of ordinary or structural concrete, unreinforced.
2 ft. thickness of ballast or broken stone.
2 ft. 6 in. thickness of earth or sand.

The treatment of glass with adhesives is aimed at preventing the glass from flying into small fragments. Materials mentioned are: Thick, tough or reinforced paper applied with flour paste or acacia mucilage rendered slightly tacky by the addition of 5 per cent. of glycerin or treacle; cardboard or textile materials, *e.g.*, surgical plaster or insulating tape; and transparent wrapping films (including cellophane). The uncoated film may be applied with a good clear gum to which 15 per cent. of glycerin has been added. For cellulose acetate film a mixture of nine parts of treacle with one part of warm water is suggested. Certain liquid coatings are now being sold as "anti-shatter" treatments. They should be renewed every two or three months. Some of these products consist of a solution of rubber, others probably have a cellulose ester basis. Further methods of protection include (against blast) the use of wire supports to clamps in the centre of the window, and (against splintering) the coating of the windows with a thin film of plain gauze.

* * * * *

HORSE-RACING AND BREEDING

Nothing has so far happened to alter the decision that there shall be no racing in this country until such time as a change in the situation warrants a review of the subject.

In the meantime private and public breeders are carrying on as best as they can. Many of last year's privately bred yearlings have not yet been raced; most of last year's public-bred yearlings have not yet been sold and so have not even been sent to training stables. Last year's foals, now yearlings, are growing, and some of them would have been offered for sale at Newmarket this month, but the sales have been abandoned. Many public breeders have on their hands not only last year's yearlings but also this year's.

A large number of the older horses in training have been turned out in their trainers' paddocks or sent to their owners' home paddocks. Not a few, it is to be feared, have been destroyed. On the other hand, quite a number of horses are still being kept in good work in case racing may be resumed soon. Other horses have been sent to Ireland, where racing is being carried on as usual. —*The Times.*

* * * * *

National rations for livestock will be introduced on Monday next. There will be four compound rations for cattle and sheep, two for pigs and six for poultry. By a Ministry of Food Order manufacture or preparation of any but a prescribed range of standard compounds and mixed feeding stuffs will be prohibited. A minimum and in some cases a maximum oil and albuminoid content, and the maximum fibre content of each compound will be laid down.

CORRESPONDENCE

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

* * * * *

THE PROBLEM OF COASTAL PRACTICES

To the Editor of the Veterinary Record

Sir,—In view of the possible evacuation of certain coastal towns and the consequent complete collapse of small animal practices in these areas, there are a certain number of qualified men at a loss how best (*a*) to devote their services, (*b*) to earn a living.

Whilst anxious to co-operate with the Government's wishes that their services should always be available, these men may be driven to seek different employment in other spheres, though the exploration of "collateral channels," *e.g.*, the R.A.M.C., is not encouraged.

No doubt the Royal College and the National Veterinary Medical Association are giving this matter their careful consideration, and with this knowledge—to stimulate discussion—I offer the following suggestions.

That men whose earnings have fallen below a level to be fixed be enrolled in the National A.R.P. Animals Committee's service.

That these men then become available to the service either to remain where they are or to be moved to other areas as swiftly moving events may dictate.

That these men—whose services are required by the Home Office—be paid some retainer weekly for their services by N.A.R.P.A.C. or by the Government through them.

I am not suggesting an elaborate salary, merely a wage to support existence and a family allowance based on some army scale.

I feel that a little thought along these lines would put at the disposal of the authorities a body of highly trained men, capable of being sent immediately where most required, and, all possessing organising ability and initiative, animal populations of areas could then be dealt with in an orderly and expeditious fashion.

The cost of the scheme would not be great. Cars, etc., are already available and at the same time members of this service would have the security of organised enrolment and the knowledge that their capabilities were being directed along the most advantageous lines.

I hope this suggestion may be of help, and I am forwarding a copy thereof to the three bodies concerned, the Royal College of Veterinary Surgeons, the National Veterinary Medical Association, and the National A.R.P. for Animals Committee.

Yours faithfully,
A. Stuart Watson.

231B, Leigh Road,
Leigh-on-Sea, Essex.
July 1st, 1940.

* * * * *

THE NATIONAL A.R.P. FOR ANIMALS COMMITTEE AND POSSIBLE EVACUATION

To the Editor of the Veterinary Record

Sir,—May I bring the following before the notice of the profession.

From the early days of the National A.R.P. for Animals Committee, I entered into the work with enthusiasm and accepted the offer of Regional Veterinary Officer for the County Borough of Southend-on-Sea. I lectured on First-Aid work and Anti-Gas measures, organised First-Aid Parties and Mobile Units for animal A.R.P.

To ensure co-operation between the Borough A.R.P. and N.A.R.P.A.C. I gave lectures and demonstrations, wrote up articles for the use of the A.R.P. Wardens, and, in addition, acted as District Organiser for the Registration Branch, personally enlisting 255 Animal Guards, registering many thousands of animals and collecting £185 4s. 6d. at the time of writing.

This County Borough comes under the possibility of evacuation—new notices are repeatedly being posted up with reference to same.

The latest poster is the R.S.P.C.A.'s—size 15 inches by 20 inches, adorned with the pictures of the head of a dog and of a cat. This poster has caused much alarm and distress to owners of pets. It reads :—

"PLEASE CONSIDER THIS.

"If evacuation of this town is ordered, it may not be possible for you to take your pet animals in the train. Animals will be painlessly destroyed by competent persons at the following addresses :..."

Then follows a list of five addresses : The full name and address of one veterinary surgeon ; two of animal societies and two of the Corporation's Depots.

The Chief Constable's name is appended at the foot of the poster.

It is most curious that the only veterinary surgeon mentioned on the poster lives in a town 10½ miles from Southend-on-Sea, yet there are three veterinary surgeons who have surgeries in the borough, although I am the only one of the three who lives in the borough, at my surgery.

It is most discouraging to know that no other veterinary surgeon was consulted on the matter, or has the opportunity of co-operating. Further, it has given the public the false impression that the other members of the profession have left the town ; so much so, that I have had to put up a huge notice on my door :—

"Notwithstanding the Chief Constable's Poster this Veterinary Surgery
is
Remaining Open."

Surely the R.S.P.C.A. notice should emanate from the National A.R.P. for Animals Committee with the co-operation of all the veterinary surgeons in the district.

Yours faithfully,
Frederick Donne.

387, London Road,
Westcliff-on-Sea.
July 8th, 1940.

* * * * *

"RESERVATION" OF THE PROFESSION

To the Editor of The Veterinary Record

Sir,—From letters appearing in recent issues of the *Veterinary Record*, it would appear that considerable dissatisfaction exists at the position of the veterinary profession in this time of national crisis. Some members consider that the "reservation" of the profession deprives them of the opportunity of serving their country to the best of their ability, others that it relieves them from further responsibility.

This is all the more unfortunate since in the last war our profession proved its ability and efficiency and the Army Veterinary Department became a model to all the combatant nations. But in these days of mechanisation the army does not require our services. There are, however, other directions in which the services which we are specially qualified to render might be of considerable value to the State, if the State would but make use of them. For example, we might contribute to the resuscitation and reorganisation of the pastoral industry of this country, which is at present in a very parlous condition .

It is generally acknowledged that Great Britain, although she possesses the finest livestock and richest soil in the world, is largely dependent upon overseas supplies of food; if she were cut off from these she would be in imminent danger of starvation. Thus in 1938, the value of pastoral products imported from overseas far exceeded £200,000,000 and these by reason of their excellence and continuity have ousted many similar products from their own markets.

Not only is the organisation of our pastoral industry haphazard and inefficient, but, as every veterinarian knows, our flocks and herds are riddled with diseases many of which are but imperfectly understood and, therefore,

beyond control. This lamentable state of affairs is not due to any neglect or defect on the part of the veterinary profession which, in its modest way, has repeatedly warned the politicians of the danger, but to the fact that in the past the profession has been ignored by the State. It has had to struggle unassisted for its very existence and has been entirely self-supporting. Its colleges have been allowed to fall in ruins and its teachers to work and die in poverty.

It is true that recently a State Veterinary Department has been created to detect and destroy animals infected with certain scheduled diseases. But this is a destructive policy based upon the thermometer and the gun, and if too arbitrarily applied will lead to the suppression of information and the dissemination of infection. Necessary as it may be, it will not resuscitate or build up the pastoral industry or render it capable of supporting the nation. A more constructive policy is necessary, a beneficent policy similar to that obtaining in some of our colonies, whereby farmers are instructed and assisted in the breeding and feeding of their stock, and their products are inspected, standardised and marketed, thus establishing uniformity, excellence and continuity of supply.

It is suggested that every qualified veterinary surgeon should be enrolled by the State, and a free Veterinary Service subsidised by the State should be organised, comparable to the panel system applied to the medical profession, which would be concerned as much with the prevention as with the detection and treatment of disease. The work of the very excellent administrative side which already exists would thus be considerably alleviated. And above all, veterinary research should be considerably augmented and encouraged, for it is only upon exact scientific knowledge that animals can be maintained in a state of health and bred and fed to the best advantage, the excellence of their products can be ensured, markets can be organised, diseases can be prevented, detected and treated and rational measures of control can be imposed. All these services are essentially the prerogative of the veterinarian who is the only member of society properly and specially qualified to perform them. It is to him that the State should turn if it desires to resuscitate the present decadent pastoral industries of these Isles, and place them upon a sure basis for the future.

This is no new conception of the importance and value of the veterinarian to the State. It is recognised in many of our Colonies and Dominions. It has been adopted in New Zealand and has largely contributed to the amazing progress of that country which, in a little more than a hundred years, has become so productive that the Home Government has actually had to place a quota upon some of its products to prevent them flooding the home markets. In 1938, the exports from New Zealand to the United Kingdom exceeded fifty million pounds, the greater part of which consisted of pastoral products and included twelve million pounds' worth of wool, sixteen million pounds' worth of butter, six million pounds' worth of cheese, fifteen million pounds' worth of meat, and two million pounds' worth of hides, skins and pelts. And every pound's worth of produce leaving New Zealand had been carefully inspected, graded and passed "up to standard." The veterinary profession under the late Dr. Reeks, himself a home-born veterinarian, played an all-important part in bringing about this truly remarkable success. It was by tact, assistance, instruction and beneficent control that it was achieved.

But, it may be urged, the present time of crisis is not the time for reorganisation or revolutionary changes. That objection, of course, will not "hold good." There are many professions and industries which are being reorganised and revolutionised at the present time. And this is no time for the members of the veterinary profession to stand aside lamenting that there is no service that they can perform for the State; the pastoral industry of Great Britain is in a desperate condition and it is only they, with State assistance and support, who can build it up again. The idea of a State-controlled Veterinary Service may be repugnant to a few fortunate general practitioners; but these are few and far between and the average general practitioner is very hard put to it to maintain a livelihood from country practice. Farmers cannot afford to pay him and he cannot afford to consume his petrol, ruin his clothes and pay his ever-increasing taxes, from the fees which he can earn. Indeed, the general practitioner, the guide, counsellor and friend of the farmer, is fast becoming extinct, and the farmer can ill afford to do without him.

It may be objected, also, that the writer has spent most of his life in the Colonies. That is true. He has seen a certain Colony, in spite of countless unknown diseases of man and animals, develop from barbarism to Dominion status and prosperity, largely through the efforts of an efficient veterinary service. From time to time, he has visited Great Britain and studied his craft anew in her laboratories and in the field; and, sad to say, on each visit he has realised that the pastoral industry of the "Old Country" was becoming more and more decadent, and the veterinary profession more and more neglected.

I am, Sir,

Rhodesia House, L. E. W. Bevan.
429, Strand, London.
June 18th, 1940.

* * * * *

DISPOSAL OF DISEASED MEAT

To the Editor of the Veterinary Record

Sir,—In the annotation on hydatid disease in your last issue the author recommends that all offal found to be affected with hydatid cysts should be condemned.

This is exactly what had been done with the diseased meat mentioned by Dr. Howell, which had been disposed of in an unsatisfactory manner by "throwing over the wall" or by spreading on the land for manure purposes.

What is needed is effective destruction or disposal under strict scientific supervision, of diseased meat.

Yours faithfully,

West Ham. H. E. Bywater.
July 8th, 1940.

* * * * *

"DUTCH VET."

To the Editor of the Veterinary Record.

Sir,—In my spare time I have just finished reading the novel "Dutch Vet," which I have been instrumental in introducing to the Bolton Librarian, who willingly obtained a copy for readers. It is a masterpiece of realistic writing about the all-round daily work of a veterinary surgeon in a comprehensive practice. Even Zola could not have beaten it in its realism.

On page 196 it is stated that after injecting a cow with grass tetany with calcium magnesium, Veterinary Surgeon Vlimmen (the subject of the book) used an electric vibrator on the cow's hind quarter to stimulate her to get up, which she immediately accomplished. I wonder if any British practitioner has ever adopted this supplementary procedure? If so, I should like to read about the results.

Yours sincerely,

Bolton. G. Mayall.
July 5th, 1940.

Advertiser's Announcement

Soluseptasine and Dagenan Sodium

New veterinary packings of Soluseptasine and of Dagenan Sodium-M. & B. 693 Soluble have recently been issued by the makers, Pharmaceutical Specialities (May & Baker) Limited, Dagenham, England.

Soluseptasine is employed by subcutaneous injection in the treatment of metritis, puerperal sepsis, equine pneumonia, strangles, Streptococcal joint-ill, cellulitis, and many other streptococcal infections of animals.

Dagenan Sodium is for parenteral administration in cases of contagious pneumonia of calves and influenzal pneumonia of young pigs as well as in numerous streptococcal and other bacterial infections.

The increasing use of these products in veterinary practice led to the issuing of packings of a size suitable for this purpose. Soluseptasine is now available in boxes of 10 ampoules, each 5 c.c. of 10 per cent. solution, as well as in bottles of 30 c.c. of 20 per cent. solution and Dagenan Sodium-M. & B. 693 Soluble is available in boxes of 10 ampoules each 3 c.c. and in single ampoules of 25 c.c. of a 33⅓ per cent. solution.

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and whether name and address are to be added (for which there is no extra charge).

For further particulars see "Veterinary Record," November 4th, 1932, pp. 1338 and 1339.

Factors in Canine Nutrition

[No. 29]

Vitamin B.1—Continued

Deficiency of B.1 is reported to be connected with several conditions of great significance in veterinary practice. Dogs fed on B.1-deficient diets have shown symptoms ranging from a mere 'nervous disposition' to hysteria and running fits, symptoms which disappeared on administration of B.1. Cures of similar cases have been reported from ordinary clinical practice. At least one author claims B.1 as a definite cure for hysteria and running fits. Whilst nervous diseases may in fact be due to a variety of causes, many cases will yield to the simple expedient of regular feeding with ADMIN.

Coprophagy, which is a fairly common occurrence with nervous and highly bred dogs, seems to be due to deficiency of all or part of the B complex (Fridericia et al, Journal of Hygiene, Vol. 22, No. 1). Definite cures of this habit by ADMIN are known to us.

** In Advertisement No. 27 we regret that, owing to a printers' error, " pyruvic acid " appeared as " tyrubic."*

What Admin Contains

ADMIN contains a minimum of 15,625 international units of Vitamin A; 3,906 international units of Vitamin D; 2,510 international units of Vitamin B.1 per pound, and proportional amounts of the rest of the Vitamin B complex and Vitamin E, which have as yet no international standard. It supplies assimilable calcium, phosphorus, iron, copper, manganese, and iodine in the optimum quantities and proportions. Moreover, 1 oz. of ADMIN contains as much protein nourishment as 3 ozs. of prime raw fillet steak.

PACKETS 6d. and 1/6d. (about ¼-lb. and 1-lb. respectively) are sold to the general public through chemists and corn chandlers. The 7/6d. tin (containing about 7-lbs.) is supplied to qualified Veterinarians at 5/6d. Orders of 3 tins and over are sent carriage free.

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